

## § 121.345

Jetstream 3101, Jetstream 3201, Fairchild Aircraft SA-226, Fairchild Metro SA-227.

[Doc. No. 28109, 62 FR 38380, July 17, 1997; 62 FR 48135, Sept. 12, 1997; 62 FR 65202, Dec. 11, 1997, as amended by Amdt. 121-300, 68 FR 42936, July 18, 2003]

### § 121.345 Radio equipment.

(a) No person may operate an airplane unless it is equipped with radio equipment required for the kind of operation being conducted.

(b) Where two independent (separate and complete) radio systems are required by §§ 121.347 and 121.349, each system must have an independent antenna installation except that, where rigidly supported nonwire antennas or other antenna installations of equivalent reliability are used, only one antenna is required.

(c) ATC transponder equipment installed within the time periods indicated below must meet the performance and environmental requirements of the following TSO's:

(1) *Through January 1, 1992:* (i) Any class of TSO-C74b or any class of TSO-C74c as appropriate, provided that the equipment was manufactured before January 1, 1990; or

(ii) The appropriate class of TSO-C112 (Mode S).

(2) *After January 1, 1992:* The appropriate class of TSO-C112 (Mode S). For purposes of paragraph (c) (2) of this section, "installation" does not include—

(i) Temporary installation of TSO-C74b or TSO-C74c substitute equipment, as appropriate, during maintenance of the permanent equipment;

(ii) Reinstallation of equipment after temporary removal for maintenance; or

(iii) For fleet operations, installation of equipment in a fleet aircraft after removal of the equipment for maintenance from another aircraft in the same operator's fleet.

[Doc. No. 6258, 29 FR 19205, Dec. 31, 1964, as amended by Amdt. 121-101, 37 FR 28499, Dec. 27, 1972; Amdt. 121-190, 52 FR 3391, Feb. 3, 1987]

### § 121.347 Radio equipment for operations under VFR over routes navigated by pilotage.

(a) No person may operate an airplane under VFR over routes that can

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be navigated by pilotage, unless it is equipped with the radio equipment necessary under normal operating conditions to fulfill the following:

(1) Communicate with at least one appropriate ground station from any point on the route.

(2) Communicate with appropriate traffic control facilities from any point within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport in which flights are intended.

(3) Receive meteorological information from any point en route by either of two independent systems. One of the means provided to comply with this subparagraph may be used to comply with paragraphs (a)(1) and (2) of this section.

(b) No person may operate an airplane at night under VFR over routes that can be navigated by pilotage unless that airplane is equipped with the radio equipment necessary under normal operating conditions to fulfill the functions specified in paragraph (a) of this section and to receive radio navigational signals applicable to the route flown, except that a marker beacon receiver or ILS receiver is not required.

[Doc. No. 6258, 29 FR 19205, Dec. 31, 1964, as amended by Amdt. 121-226, 56 FR 65663, Dec. 17, 1991]

### § 121.349 Radio equipment for operations under VFR over routes not navigated by pilotage or for operations under IFR or over-the-top.

(a) No person may operate an airplane under VFR over routes that cannot be navigated by pilotage or for operations conducted under IFR or over-the-top, unless the airplane is equipped with that radio equipment necessary under normal operating conditions to fulfill the functions specified in § 121.347(a) and to receive satisfactorily by either of two independent systems radio navigational signals from all primary en route and approach navigational facilities intended to be used. However, only one marker beacon receiver providing visual and aural signals and one ILS receiver need be provided. Equipment provided to receive signals en route may be used to receive signals on approach, if it is capable of receiving both signals.